

AMENDMENT AND CLAIM LISTING

Please amend the claims as follows:

Claim 1 (currently amended) 1. A curing light comprising:

a wand adapted to be grasped by a human hand for use in positioning and manipulating the curing light,

said wand having a longitudinal axis,

a power supply,

electronic control circuitry for controlling the curing light,

a light module,

said light module including a secondary heat sink, said secondary heat sink being configured to assist in heat dissipation,

a primary heat sink affixed to said secondary heat sink,

at least one light emitting semiconductor chip module mounted on said primary heat sink, and

means for providing pulsed current input to said chip in a square wave pattern that consists of periods of current input at a level I_1 followed by periods of rest with no current input in order to provide light output at an average light output power level that is greater than the light output power level that would result from providing continuous wave current input to said chip at current input level I_1 ;

light emitted from said light emitting semiconductor chip module travels directly away from the curing light at an angle of from about 45 degrees to about 135 degrees with said longitudinal axis.

Claim 2 (original) 2. A curing light as recited in claim 1 wherein I_1 is from about 25 milliamps to about 2 amps.

Claim 3 (original) 3. A curing light as recited in claim 1 wherein I is from about 350 millamps to about 1.2 amps of current.

Claim 4 (original) 4. A curing light as recited in claim 1 wherein I is more than about 100 millamps of current.

Claim 5 (currently amended) 5. A curing light comprising:

a wand adapted to be grasped by a human hand for use in positioning and manipulating the curing light,

a heat sink, said heat sink being configured to assist in heat dissipation,

said heat sink having a longitudinal axis,

at least one light emitting semiconductor chip mounted on said heat sink,

said chip being selected from the group consisting of light emitting diode chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip arrays, surface emitting laser chips, edge emitting laser chips, and VCSEL chips,

and

electronic control circuitry for providing pulsed current input to said chip in a square wave pattern that consists of periods of current input at a level I followed by periods of rest with no current input in order to provide light output at an average light output power level that is greater than the light output power level that would result from providing continuous wave current input to said chip at current input level I;

light emitted from said light emitting semiconductor chip travels directly away from the curing light at an angle of from about 45 degrees to about 135 degrees with said longitudinal axis.

Claim 6 (original) 6. A curing light as recited in claim 5 wherein I is from about 25 millamps to about 2 amps.

Claim 7 (original) 7. A curing light as recited in claim 5 wherein I is from about 350 millamps to about 1.2 amps of current.

Claim 6 (original) 8. A curing light as recited in claim 5 wherein I is more than about 100 millamps of current.

Claim 9 (currently amended) 9. A curing light comprising:

a wand adapted to be grasped by a human hand for use in positioning and manipulating the curing light,

a heat sink, said heat sink being configured to assist in heat dissipation,
said heat sink having a longitudinal axis,

at least one light emitting semiconductor chip module mounted on said heat sink,
said light emitting semiconductor chip module including a primary heat sink, a well in
said primary heat sink, a light emitting semiconductor chip mounted in said well, and a cover
over said well,

said chip having a plurality of epitaxial layers,
at least one of said epitaxial layers being an active layer which when bombarded with electrons releases photons,

and

electronic control circuitry for providing pulsed current input to said chip in a square wave pattern that consists of periods of current input at a level I followed by periods of rest with no current input in order to provide light output at an average light output power level that is greater than the light output power level that would result from providing continuous wave current input to said chip at current input level I;

wherein light emitted from said light emitting semiconductor chip travels directly away
from the curing light at an angle of from about 45 degrees to about 135 degrees with said
longitudinal axis.

Claim 10 (original) 10. A curing light as recited in claim 9 wherein said chip is selected from the group consisting of light emitting diode chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip arrays, surface emitting laser chips, edge emitting laser chips, and VCSEL chips,

Claim 11 (original) 11. A curing light as recited in claim 9 wherein I is from about 25 milliamps to about 2 amps.

Claim 12 (original) 12. A curing light as recited in claim 9 wherein I is from about 350 milliamps to about 1.2 amps of current.

Claim 13 (original) 13. A curing light as recited in claim 9 wherein I is more than about 100 milliamps of current.

Claim 14 (currently amended) 14. A curing light comprising:

a wand adapted to be grasped by a human hand for use in positioning and manipulating the curing light,

a heat sink, said heat sink being configured to assist in heat dissipation,
said heat sink having a longitudinal axis,

an array of light emitting semiconductor chips mounted on said heat sink,

at least one of said ~~chip~~ chips having a plurality of epitaxial layers,

at least one of said epitaxial layers being an active layer which when bombarded with electrons releases photons,

and

electronic control circuitry for providing pulsed current input to said chips in a square wave pattern that consists of periods of current input at a level I followed by periods of rest with no current input in order to provide light output at an average light output power level that is greater than the light output power level that would result from providing continuous wave current input to said chips at current input level I;

wherein light emitted from said light emitting semiconductor chips travels directly away from the curing light at an angle of from about 45 degrees to about 135 degrees with said longitudinal axis.

Claim 15 (currently amended) 15. A curing light as recited in ~~claim 9~~ claim 14 wherein said chips are selected from the group consisting of light emitting diode chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip arrays, surface emitting laser chips, edge emitting laser chips, and VCSEL chips,

Claim 16 (original) 16. A curing light as recited in claim 15 wherein I is from about 25 millamps to about 2 amps.

Claim 17 (original) 17. A curing light as recited in claim 15 wherein I is from about 350 millamps to about 1.2 amps of current.

Claim 18 (original) 18. A curing light as recited in claim 15 wherein I is more than about 100 millamps of current.